

WE CLAIM:

1. A dilatation balloon for use in a medical catheter device, said dilatation balloon comprising a thermoplastic elastomer in combination with a non-compliant structural polymeric material.

2. A balloon in accordance with claim 1 wherein said thermoplastic elastomer comprises an engineering thermoplastic elastomer.

3. A balloon in accordance with claim 2 wherein said engineering thermoplastic elastomer is a polyether glycol/polybutylene terephthalate block copolymer.

5 4. A balloon in accordance with claim 1 wherein said thermoplastic elastomer is combined with said non-compliant structural polymeric material as an outer elastomeric layer disposed upon an inner structural layer of said non-compliant structural polymeric material.

5 5. A balloon in accordance with claim 1 wherein said thermoplastic elastomer is combined with said non-compliant structural polymeric material as both an inner elastomeric layer and an outer elastomeric layer disposed upon an intermediate structural layer of said non-compliant structural polymeric material.

6. A balloon in accordance with claim 1 wherein said thermoplastic elastomer is combined with said non-compliant structural polymeric material as a blend of said thermoplastic elastomer and said non-compliant structural polymeric material.

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7. A balloon in accordance with claim 6 wherein said blend comprises a structural layer and said balloon further comprises an elastomeric layer disposed upon said structural layer, said elastomeric layer comprising a thermoplastic elastomer.

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8. A balloon in accordance with claim 7 wherein said blend comprises a ratio of about 40:60 to about 60:40, thermoplastic elastomer to non-compliant structural polymeric material.

9. A balloon in accordance with claim 6 wherein said blend comprises an elastomeric layer and said balloon further comprises a structural layer upon which said elastomeric layer is disposed.

10. A balloon in accordance with claim 9 wherein said blend comprises a ratio of about 30:70 to about 60:40, thermoplastic elastomer to non-compliant structural polymeric material.

11. A catheter for insertion into a bodily conduit, said catheter comprising:

a shaft including a lumen internal to said shaft for delivery of fluid inflation media; and

5 a dilatation balloon bonded to said shaft and defining a chamber, said chamber being in fluid communication with said lumen to permit inflation of said chamber, wherein said dilatation balloon comprises a thermoplastic elastomer in combination with a non-compliant structural polymeric material.

12. A catheter in accordance with claim 11 wherein said thermoplastic elastomer is an engineering thermoplastic elastomer.

13. A catheter in accordance with claim 11 wherein said thermoplastic elastomer is combined with said non-compliant structural polymeric material as an outer elastomeric layer disposed upon an inner structural layer of said non-compliant structural polymeric material.

14. A catheter in accordance with claim 11 wherein said thermoplastic elastomer is combined with said non-compliant structural polymeric material as both an inner elastomeric layer and an outer elastomeric layer disposed upon an intermediate structural layer of said non-compliant structural polymeric material.

15. A catheter in accordance with claim 11 wherein said thermoplastic elastomer is combined with said non-compliant structural polymeric material as a blend of said thermoplastic elastomer and said non-compliant structural polymeric material.

16. A method for fabricating a dilatation balloon for use in a medical catheter device, said method comprising the steps of:

5 producing a generally cylindrical balloon blank from a combination of a thermoplastic elastomer and a non-compliant structural material; and

shaping said balloon blank to produce said dilatation balloon.

17. A method in accordance with claim 16 wherein said balloon blank producing step comprises disposing an elastomeric layer comprising said thermoplastic elastomer upon a structural layer comprising said non-compliant structural polymeric material to produce a layered, generally cylindrical balloon blank.

18. A method in accordance with claim 17 wherein said disposing step comprises coextruding said thermoplastic elastomer and said non-compliant structural polymeric material.

19. A method in accordance with claim 17 wherein said disposing step comprises disposing said structural layer as an inner layer and disposing said thermoplastic elastomer as an outer elastomeric layer on said inner structural layer.

20. A method in accordance with claim 17 wherein said disposing step comprises disposing said structural layer as an intermediate layer and disposing said thermoplastic elastomer as both an outer and an inner elastomeric layer on said intermediate structural layer.

21. A method in accordance with claim 16 wherein said balloon blank producing step comprises: preparing a blend of a thermoplastic elastomer and a non-compliant structural polymeric material; and forming a generally cylindrical balloon blank from said blend.

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22. A method in accordance with claim 16 wherein said shaping step comprises shaping said balloon blank such that said dilatation balloon has a generally cylindrical central portion and generally conical end portions.

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